

Comments on Tim's School Model

As a qualitative diagram, the school model documents Tim's assumptions about schools. By focusing on the model, we have the opportunity to collaborate, coordinate and cooperate.

Tim states his goal on his blog (2/2, Onething46): "I am trying to capture a change process that occurs everyday in classrooms."

What is changing in the classroom? The latest model from Onething46 shows STUDENT KNOWLEDGE changing over time as learning and forgetting flows change. Learning and forgetting flows change as many other variables change, one of which is STUDENT KNOWLEDGE. So there is a feedback loop where the target learning is always changing with each grade level, the accumulated knowledge scaffolds the student to accumulate more knowledge to compare to the next grade level target learning. (Model from Onething45 seems to be a prior version).

Tim wrote that he changed the title of the model from achievement, to learning, to understanding and now knowledge. As you know, the meanings of these words are different, and the meanings that people attribute to these words varies based on their mental model (assumptions). In public education institutions (95% of students), the phrase "student learning" means the accumulation of knowledge as measured by quizzes, tests, final exams, grades, standardized tests and all the other methods education institutions from preK to PhD use to measure the accumulation of knowledge and call it learning. Public education institutions and private ones like Tim's usually have the same definitions and meanings.

The model (Onething46) variables for learning include: Target for Student Learning, Learning Norm, Learning Rate, and Learning. What are the definitions and meanings for these variables? What assumptions are you making to support your definitions and meanings?

Bloom's Taxonomy was first presented in 1956 and his classification of learning objectives for students within education became the foundational and essential element within the education community. Based on Bloom, the accumulation of knowledge and skills, actuated or actionable knowledge, and acquiring knowledge became the accepted definition of learning.

As a consequence, teachers and students work at the bottom of Bloom's pyramid. A revised Bloom's pyramid uses "Remembering" at the bottom with "Understanding" the next level up. Educational institutions have teachers and students spend all their time, money and energy at the bottom.

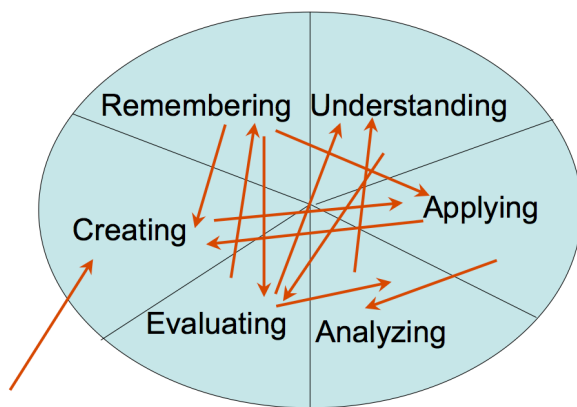
I have settled on Barry Richmond's model of learning. This means I have changed my mental model of learning. I no longer believe learning is the accumulation of anything. I believe learning happens when I change my mental model. That is Barry's definition of

learning. This is complex because now I am using meta concepts: thinking about thinking and learning about learning.

However, everyone resists changing mental models. We make assumptions and instantly leap to a conclusion. We have deeply held values and beliefs. Everyday I have to be patient, overcome my instinctive reactions and be open to new ideas and to changing my mental model about ideas and things.

A 21st Century definition of learning might include entering into a project from any of the six different categories defined by Bloom and then to wander around through all the information about the project. Adults and children need an environment where they can explore. Where they can study, design, check and compare. Where they can work on inventing, experimenting and structuring.

21st Century Taxonomy

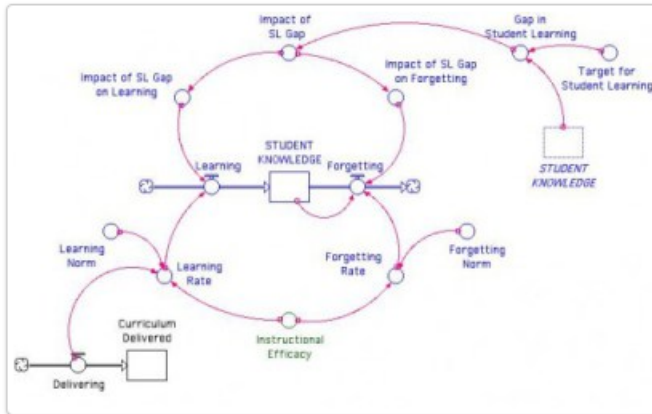


A classroom where teachers and students are learning about systems (systems thinking and system dynamics) requires this new definition of learning. The teacher becomes a guide, a participant in the learning. The students work together in small groups rather than individually sitting in rows and listening to a lecture. To an observer not familiar with this approach the classroom appears to be chaos with lots of talking and activity. The teacher does not appear to be doing any “classroom management.”

Every classroom I attended up through my MBA in 1989, was organized and managed in the traditional way based on Bloom’s pyramid. I accumulated just enough of the right knowledge to be able to graduate. However my learning happened on the job or at home. As I accumulate knowledge, experience changes my mental model of how the real world works.

Every student enters the classroom with their own mental models of how the real world works because of their experiences. Teachers ignore these mental models and focus on ways that students accumulate knowledge so that the teacher can measure them using tests based on the curriculum.

A new definition of learning, changing mental models, will lead educators to changing subject standards, then to states changing standards and assessments, and then educators changing curriculum. Then teachers and students will work everywhere in Bloom's taxonomy. Educators will change the outcomes for millions of children when educators change the definition of learning.



This zoom into STUDENT KNOWLEDGE depicts three key ideas: students can forget things, teachers impact both learning and forgetting, and students own sense of their gaps impact their learning and forgetting. An obvious assumption here, since this is a school model, is that all learning is curriculum driven. Mark Twain, of course, would take issue with that.